What is Claimed Is:

1. A method for measuring the crushing strength of an abrasive, the abrasive comprising particles, the method comprising:

determining an initial particle size distribution for the particles;

subjecting the abrasive to a crushing force;

determining a post-crushing particle size distribution for the particles; and

comparing the initial and post-crushing particle size distributions.

2. The method of claim 1, comprising determining the initial and post-crushing particle size distributions using a particle size distribution analyzer.

3. The method of claim 2, wherein the comparing step comprises comparing the cumulative percentiles of particles between 50% and 95% of the initial and post-crushing particle size distributions.

4. The method of claim 1, wherein subjecting the abrasive to a crushing force comprises:

placing the abrasive into a cup;

placing a piston into the cup until a face of the piston touches the abrasive;

applying a force to the piston or the cup such that the force is transmitted to the abrasive; and

rotating the piston and the cup in opposite directions while the force is transmitted to the abrasive.

5. The method of claim 4, wherein the cup and the piston are rotated at a speed of about 200 RPM or less.

6. The method of claim 4, wherein the abrasive is for use in a lapping process, the method comprising subjecting the abrasive to a crushing force approximately equal to that of the lapping process.

7. The method of claim 3, wherein the comparing step comprises determining a crushing strength of the abrasive by calculating a ratio of cumulative percentiles of particles between 50% and 95% of the post-crushing particle size distribution to the cumulative percentiles of particles between 50% and 95% of the initial particle size distribution.

8. The method of claim 3, comprising determining a crushing strength index by dividing the cumulative percentiles of particles between 50% and 95% of the post-crushing particle size distribution by the cumulative percentiles of particles between 50% and 95% of the initial particle size distribution, and multiplying the result by 100.

9. The method of claim 6, wherein the abrasive comprises diamond particles having a size of about 40 microns or less, the method comprising rotating the cup and the piston at about 10 RPM, respectively;

wherein the force on the abrasive is about 13.4 lbs.

10. The method of claim 1, comprising taking initial and post-crushing micrographs of the abrasive, and comparing the micrographs to determine fracture characteristics of the abrasive.

11. The method of claim 10, comprising taking the micrographs using an SEM or FESEM.

12. An apparatus for measuring the crushing strength of an abrasive used in a lapping process, the abrasive comprising particles, the apparatus comprising:

a cup for holding the abrasive;

a first motor for rotating the cup in a first direction;

a piston having a face for rotatably fitting within the cup and contacting the abrasive;

a second motor for rotating the piston in a second direction opposite the first direction; and

a press for pressing the piston against the abrasive and crushing the particles while the first and second motors are rotating.

13. The apparatus of claim 12, wherein the piston face and the cup each have a polycrystalline diamond compact (PCD) disc for contacting the abrasive and for preventing contact between the abrasive and the piston face and between the abrasive and the cup.

14. The apparatus of claim 12, wherein the press comprises a linear actuator for placing a load on the piston.

15. The apparatus of claim 14, further comprising:

a base;

a spindle rotatably mounted to the base and operatively connected to the first motor, the cup being mounted to the spindle; and

a platform mounted to the base for supporting the piston, the linear actuator and the second motor.

16. The apparatus of claim 14, comprising a belt for connecting the spindle to the first motor.

17. The apparatus of claim 12, wherein the first and second motors are for rotating the piston and the cup, respectively, at a speed of about 200 RPM or less.

18. The apparatus of claim 12, wherein the press is for pressing the piston against the abrasive with a load of about 500 lbs or less.

19. The apparatus of claim 14, wherein the linear actuator comprises a pneumatic cylinder or a hydraulic cylinder.

20. The apparatus of claim 14, wherein the linear actuator comprises a servo driven actuator.